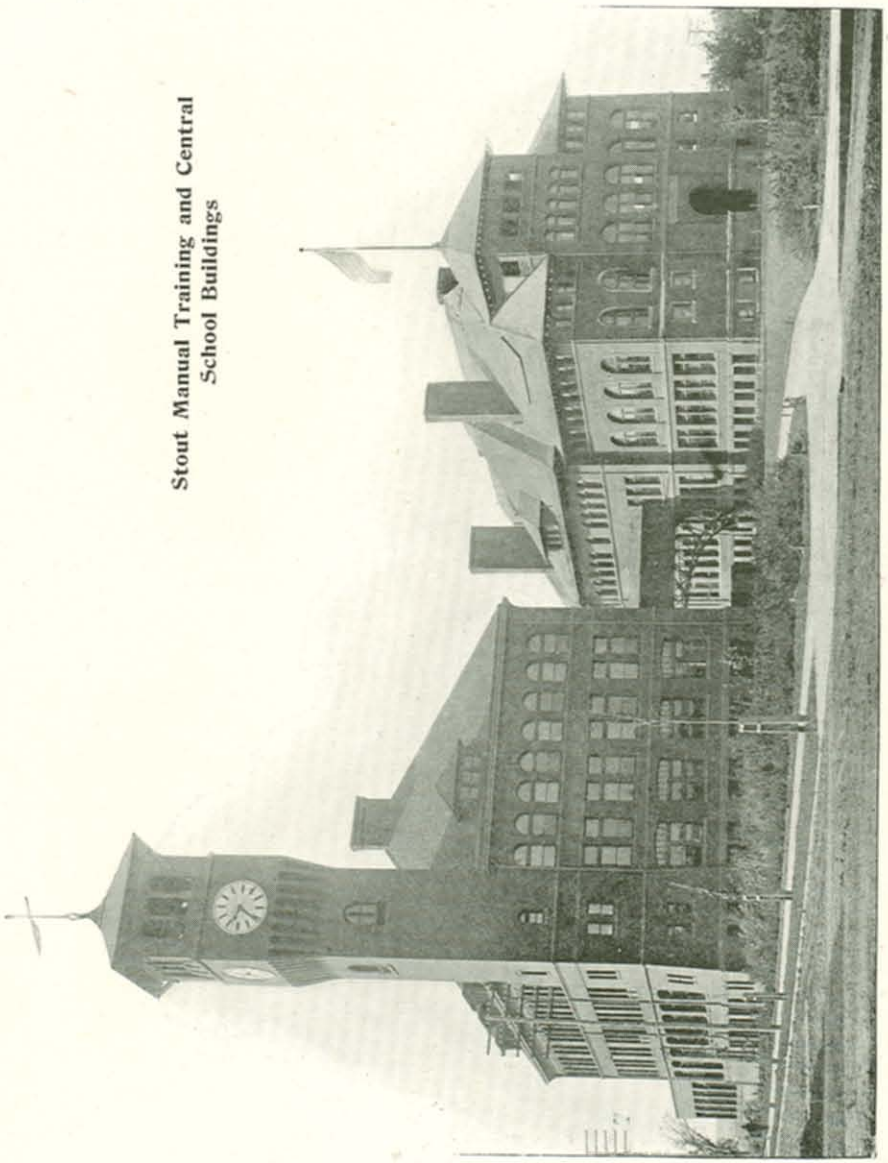
The Stout Training Schools

MENOMONIE
WISCONSIN

For the
Preparation of Teachers of Manual Training, Teachers of Domestic Science and Kindergarten Teachers

Circular of Information—School Year 1904-1905



Stout Manual Training and Central School Buildings

THE

Stout Training Schools

FOR THE PREPARATION OF

Manual Training Teachers, Domestic Science Teachers and Kindergarten Teachers.

MENOMONIE, WISCONSIN.

Under the Management of

THE BOARD OF EDUCATION.

NEWS PRINT
MENOMONIE, WISCONSIN
1904

OFFICERS OF
Administration and Instruction

SCHOOL YEAR 1904-5

Board of Education

HON. J. H. STOUT, PRESIDENT.

JOHN R. MATHEWS, OTTO G. ANDERSON,

ALFRED PILLSBURY.

Superintendent

L. D. HARVEY.

Instructors

L. D. Harvey, Superintendent of Schools, Psychology and Pedagogy, and General Superintendent of Professional Work.

Milton College, 1872; High School Principal, 1873-1879; City Superintendent, 1880-1885; Normal Schools, 1885-1898; State Superintendent, 1899-1902.

John H. Mason, Director of Training School for Manual Training Teachers; Mechanical Drawing and Machine Shop Practice.

Worcester Polytechnic Institute, Department Mechanical Engineering, 1882; engaged in professional work with various manufacturing concerns, 1882-1889; teacher of mathematics, drawing, and manual training, Hillside Home School, Hillside, Wis., 1889-1891; teacher of drawing and manual training, Stout Manual Training School, Menomonie, Wis., 1891-1893; associate professor of manual training, a director of the department of manual training, and secretary of the faculty, Teachers College, Columbia University, 1893-1898; teacher of mathematics, drawing, and manual training, Stout Manual Training School, 1899-1903.

Miss Laura G. Day, Director of Training School for Domestic Science Teachers; Food Materials and Food, Household Economy and Management.

Kansas State Agricultural College, 1893; post-graduate work, domestic science, 1893-1894. Assistant in domestic science and arts department, Kansas State Agricultural College, 1894-1895; teacher of domestic science and arts, Stout Manual Training School, Menomonie, Wis., 1895-1900; special lecturer and director of department of domestic economy, Purdue University, La Fayette, Ind., 1901-1902.

Miss Martha Logsdon-Coull, Director of Kindergarten Training School; Supervisor of Kindergartens and Primary Schools; Theory and Practice of the Kindergarten and Primary School; History of Education, and Construction Work for Primary Grades.

Indianapolis (Ind.) High School, 1888; teacher at Lake City, Ia., one year,—Grammar department; two years,—Primary work; Indiana Kindergarten and Primary Normal Training School.—Graduate from kindergarten and primary course, 1893, from the normal department, 1894; supervisor of kindergartens and primary grades, in last named school; instructor in theory and practice in same school, three years; supervisor of domestic training schools and kindergartens, in connection with charity work in Washington, D. C., one year; supervisor of kindergartens, Menomonie, Wis., 1898-9; Supervisor of kindergartens and primary schools, and principal of training school, 1899.

Miss Kate Murphy, Director of Art Department of Stout Manual Training School; Drawing, Color Work, Design and Illustration.

St. Louis School of Fine Arts, 1887-9; director art department Elmwood Normal School, Farmington, Mo., 1888-9; New York School of Technical Design, 1889-90; New York Studios, 1890-2; teacher of drawing in public schools of Chicago, 1893-4; director of art department of Manual Training School, and supervisor of drawing in the grades, Menomonie Public Schools, 1894.

N. J. MacArthur, Director of School of Physical Training; Theory and Practice of Physical Training.

Walkertown (Ontario) High School, 1885; Collegiate Institute at Collingwood, Ont., 1885-6; Model School, Durham, Ont., 1886-7; taught school, 1887-8-9; Collegiate Institute at Owen Sound, 1890-1; University of Toronto, 1891-5, B. A.; principal of High School, Albert Lea, Minn., 1895-6; superintendent of schools, Le Sueur, Minn., 1896-7; Harvard School of Physical Training, Summers, 1896 and 1899; director of physical training and instructor in athletics, St. Cloud (Minn.) State Normal School, 1897-1901; director School Physical Training, Menomonie, 1902.

S. H. Metcalf, Director of Music in Public Schools; Theory of Music, Note Reading, Kindergarten Songs, and Chorus Work.

Albert G. Bauersfeld, Elementary Wood-working, and Supervisor of Manual Training in the Grades.

Richard T. Crane Manual Training High School, Chicago, 1898; Chicago Normal School, 1899-1900; special work, Lewis Institute of Technology, 1900; manual training teacher, James McCosh School, Chicago, 1900-1901; assistant, manual training department, Chicago Normal School, 1901-1903; teachers' extension department, University of Chicago, 1902-1903; Stout Training Schools, 1903.

S. S. Judd, Joinery, Foundry Practice, Forging, and Machine Shop Practice.

St. Louis Manual Training School, 1891; director mechanical department, Missouri School for the Blind, St. Louis, Mo., 1893-1899; St. Louis Public Schools, 1899-1900; Stout Training Schools, 1903.

Miss Gertrude Reinhart, Food Work and Assistant in Domestic Economy.

Toledo High School and Toledo Polytechnic, 1901; normal course domestic science, Pratt Institute, 1903; Stout Training Schools, 1903.

Miss Anna K. Flint, Sewing, Dressmaking and Millinery.

Menomonie High School, 1890; University of Wisconsin, 1895; assistant, Durand High School, 1895-1897; special work domestic science, Stout Manual Training School, 1898-1900; teacher of sewing and assistant in domestic science department, Stout Manual Training Schools, 1900.

Miss Louise R. Atchison, Critic Teacher and Director of the Codington Kindergarten; Gifts, Stories, Games, and Manual Work.

Wichita (Kan.) High School, graduated, 1897; Indiana Kindergarten and Primary Normal Training School.—kindergarten and primary course 1897-9,—normal course 1900; director Oak Hall Kindergarten, Indianapolis, Ind., 1899-1900; Director Codington Kindergarten, Menomonie, Wis., 1900.

Miss Katherine B. Shepherd, Critic Teacher and Director of Central Kindergarten; Occupations and Manual Work.

High School work, Louisville, Ky., and Plymouth, Ind., four years; Cook County Normal School, 1895-7; Chicago Kindergarten Institute, 1899-1900; director North Menomonie Kindergarten, 1900.

Miss Mary Ehrhard, Critic Teacher and Director North Menomonie Kindergarten; Clay Modeling and Manual Work.

Menomonie Kindergarten Training School, 1900.

Miss Edith H. Warning, Teacher of Languages in High School; Composition and Rhetoric.

University of Wisconsin, 1903; assistant, High School, Hartford, Wis., 1901-1903; assistant, High School, Menomonie, Wis., 1903-1904.

George A. Works, Science Teacher in High School; Nature Work.

River Falls Normal School, 1898; High School principal, 1899-1902; University of Wisconsin, 1904.

Harold B. Shinn, Science Teacher in High School; Chemistry and Bacteriology.

Chicago High School, 1896; Northwestern University, 1903; assistant in botany, Northwestern University, 1899-1900; science teacher, High School, Ludington, Mich., 1900-1901; biology teacher, High School, Goshen, Ind., 1901-1902; fellow in biology, Northwestern University, 1902-1903; special work, University of Wisconsin, 1901; special work, Woods Holl, Mass., 1902; science teacher, High School, Menomonie, Wis., 1903-4.

Thomas R. Lloyd-Jones, Principal of High School; Composition.

University of Wisconsin, 1896; assistant principal, Hillside Home School, 1896-1900; supervising principal, Hartford, Wis., 1900-1903; principal Menomonie High School, 1903—; president Tower Hill Summer School, 1903-1904.

Carolyn Bornheim, Assistant, School of Physical Training.

Normal School, North American Gymnastic Union, 1903.

THE STOUT MANUAL TRAINING SCHOOL.

Its Character and Function in the Public School System of Menomonie.

The Stout Manual Training School building at Menomonie, Wisconsin, was erected and equipped by the Honorable J. H. Stout, for the purpose of providing facilities for a complete system of manual training, which should be available for the public school children of the city.

Mr. Stout was a pioneer in the movement for the incorporation of manual training into the public school system of the state. The school which he has provided for the city of Menomonie, is without question the best equipped institution in America, adapted and open to all grades in the public schools, for work in manual training and domestic science. No expense has been spared to provide the best of everything needed for a complete equipment.

The reputation of the Menomonie public school system has extended throughout the country. While much yet remains to be done in the working out of a complete system of manual work from the kindergarten through the high school, it is probable that a nearer approach to it has been made in Menomonie than in any other entire city school system in the country.

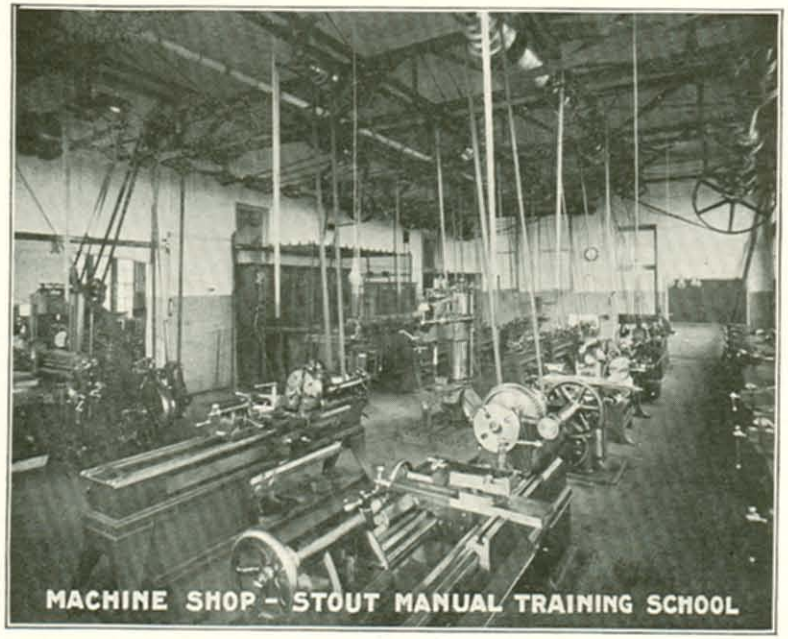
Construction work of various kinds is continued from the kindergarten through the lower grades, followed by a thorough course in free hand and mechanical drawing, wood and metal working, including forging, foundry and machine shop practice. An extended course in domestic science, including sewing, cutting and fitting of garments, cooking, house sanitation, household economy, and the elements of nursing is provided and open to all pupils in the public schools.

Enlargement of the Work.

For some time it has been the desire of Mr. Stout to make a larger use of this splendid equipment than is demanded by the needs of the pupils in the public schools. The opportunity for such use has grown out of the demand for properly trained teachers of manual training and of domestic science. There are few schools in the country today making a specialty of training teachers of these classes.

Many communities anxious to organize work in manual training and domestic economy in connection with the public schools, find it impossible to secure teachers competent for the work. Mr. Stout believed that there was a demand for a first-class training school in the west for the preparation of teachers of these subjects. His belief in this demand, coupled with a desire to fully utilize the equipment

BLACKSMITH SHOP - STOUT MANUAL TRAINING SCHOOL.



MACHINE SHOP - STOUT MANUAL TRAINING SCHOOL

in the existing school, led him to propose to the board of education the organization of such training schools. The board heartily seconded his plan, and with him made provision for the opening of the training schools in September, 1903.

Well Known Educational Man in Charge of the Work.

In order to insure the success of this undertaking, the board recognized the necessity of securing a man interested in industrial education and with experience in the training of teachers, to organize and take charge of the work.

The position of superintendent of the city school system and of the training schools for manual training, domestic science, and kindergarten teachers was offered to L. D. Harvey and accepted by him.

Mr. Harvey's wide experience in educational work and his well-known interest in industrial education fit him admirably for the position. He has had experience in all grades of public school teaching, and in the supervision of city schools. He was for seven years Institute conductor in the Oshkosh State Normal School, and for six years president of the Milwaukee State Normal School, where he organized the first state training school in Wisconsin for kindergarten teachers. In 1898 he was elected State Superintendent, which office he held for four years. In 1899 he was appointed a commissioner by the State Legislature to investigate and make a report on industrial education as carried on in this and other countries, and in 1901 was re-appointed to continue this investigation and report on courses of study in manual training, domestic science, and the elements of agriculture for public schools. In the investigation preparatory to making these reports, he made a broad study of the various subjects which gave him a large acquaintance with what has been accomplished in these fields, and definite views as to necessary steps for a more complete development of this system of instruction.

ORGANIZATION OF THE TRAINING SCHOOLS.

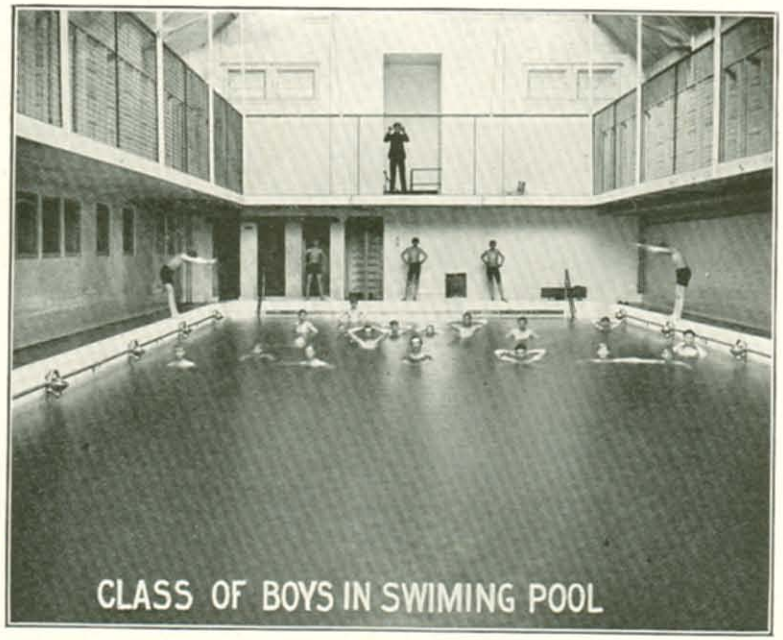
The Training Schools for Manual Training and Domestic Science Teachers were organized and work begun Sept. 14, 1903. Though the announcement of the opening of these schools was not made until late in the summer, 35 students were enrolled in the Training School for Kindergarteners, 21 in the Training School for Domestic Science teachers, and 3 in the Training School for Manual Training teachers.

The Kindergarten Training School was organized in 1899.

The small enrollment in the Manual Training School is doubtless due to the lateness of the announcement of the opening of the school, and to the fact that few young men appreciate the extent and character of the demand for well prepared Manual Training teachers.

The instructional force is made up of experienced teachers with special training for their different lines of work, and will be increased to keep pace with the growth of the school.

STOUT SCHOOL OF PHYSICAL CULTURE.



CLASS OF BOYS IN SWIMING POOL

TRAINING SCHOOL COURSES.

The following is a general outline of the training courses offered for the preparation of Manual Training, Domestic Science, and Kindergarten teachers.

Modification of Courses.

The outlines of the courses here given are subject to such modification as experience may show to be desirable, without reducing the total time required.

MANUAL TRAINING COURSES.

Elementary School Course.

I.

Hand Work for Primary Grades.—This work includes Basketry, Clay-modeling, Drawing, and Construction in Paper, Cardboard, Wood and Bent-iron.

Practical work by pupils and discussion of processes and methods of teaching.

II.

Wood-Working for Intermediate and Grammar Grades.—Knife work. Use of bench tools.

The Sloyd system of wood-working will be the basis of this work. Such work in joinery will be given as time will permit.

III.

Drawing.—Free-hand drawing, Mechanical Drawing, Elements of projection as applied to working drawings.

IV.

Professional Work.—(a) Psychological and Pedagogical principles in their application to the teaching of Manual Training; (b) Organization and Management of Manual Training classes in public schools; (c) History and Literature of Manual Training; (d) Observation of Teaching and Practice Teaching throughout the Senior Year.

See "Professional Work," p. 20.

Electives.

Electives in science, mathematics, English, and professional reviews of common school branches, or in work selected in the secondary school course, will be taken, the equivalent of one hour daily throughout the course. In the selection of electives, students will be expected to advise with and secure the approval of the director of the training school. Students who desire to do so may substitute Group II of the Domestic Science Course for an equivalent number of hours' work, to be selected from the above group of electives with the advice and consent of the director of the school. Physical Training.

Secondary School Course.

I.

Wood-Work for Secondary Schools.—Joinery; Pattern-making; Wood-turning.

Shop work by students and discussion of processes and methods of teaching in individual and class work.

II.

Molding and Foundry Practice.—Shop work.

III.

Forging.—Shop work.

IV.

Machine Shop Practice.

Chipping, filing, and fitting, with practice in using various machine tools in typical processes in a well equipped shop.

V.

Free-hand and Mechanical Drawing.

VI.

Professional Work.—(a) Psychological and Pedagogical principles in their application to the teaching of Manual Training in High Schools; (b) History and Literature of Manual Training; (c) Courses, Equipment, and Plans of Organization for Manual Training in High Schools and in Elementary Schools; (d) Observation of Teaching and Practice Teaching throughout the Senior Year.

See "Professional Work," p. 20.

Elective.

Physical Training.

Time Limits.

The Manual Training courses are planned with the idea that 1,440 hours' work in shop, class-room, and laboratory are necessary for the proper completion of the work in each course.

The number of hours to be given to each class of work, and the order of progression in the courses, will be determined by the attainments of students entering the school.

Tuition.

The tuition fee is one hundred dollars per year, one-half payable at the beginning of each semester. A small fee will be charged to cover the cost of material used in the laboratories and shops.

DOMESTIC SCIENCE COURSES.

Secondary School Course.

I.

Food Materials and Foods.—(a) Selection and care of materials; (b) Preparation of foods—plain, invalid and fancy cooking; (c) Food values; (d) Serving of foods, and care of dining-room and kitchen utensils.

Practical work in laboratory, kitchen, and dining room, accompanied by discussion to develop reasons for processes employed.

II.

Textile Fabrics for Wearing Apparel and Decorative Purposes.—(a) Selection of materials with reference to cost, utility, and effectiveness for purpose designed; (b) Preparation and assembling of materials in the completed article.

This work involves instruction and practice in (1) Sewing, (2) Dressmaking, (3) Millinery, (4) Household Art, (5) A study of the quality of textile fabrics, harmony of design, color, and material in costumes and for decorative house furnishings.

III.

Household Economy and Management.—(a) Furnishing and care of house; (b) House sanitation; (c) Emergencies and home nursing; (d) Laundry work; (e) Economy in marketing and in household management; (f) Household accounts.

Practical work by students, lectures and demonstrations by teachers. Selected readings.

IV.

Science.—(a) Chemistry; (b) Biology; (c) Physics; (d) Physiology and Hygiene.

The work in science will be carried on with a view to its value to the student in the study of food materials and foods. For the student who has had no work in chemistry, such a course will be necessary as is required, in order that he may do work in qualitative chemistry and may be able to understand the chemistry of foods. In biology the work will be devoted largely to a consideration of food plants and bacteria. In physics, energy and heat will be considered. In physiology and hygiene, such portions will be emphasized as correlate with the work on foods, dress, and household economy and management.

V.

Professional Work.—(a) Psychological and Pedagogical principles in and their application to the teaching of Domestic Science; (b) History and Literature of Domestic Science in its development as a part of the common school course; (c) Organization and Management of Domestic Science work in the public schools; (d) Observation of Teaching and Practice Teaching throughout the Senior year.

See "Professional Work," p. 20.

VI.

Free-Hand and Mechanical Drawing.

English.—Composition and Literary Readings.

Electives.—(a) Physical Training; (b) Drawing (Color and Design); (c) Hand work for Primary Grades; Manual Training Course for Elementary Schools.

Elementary School Course.

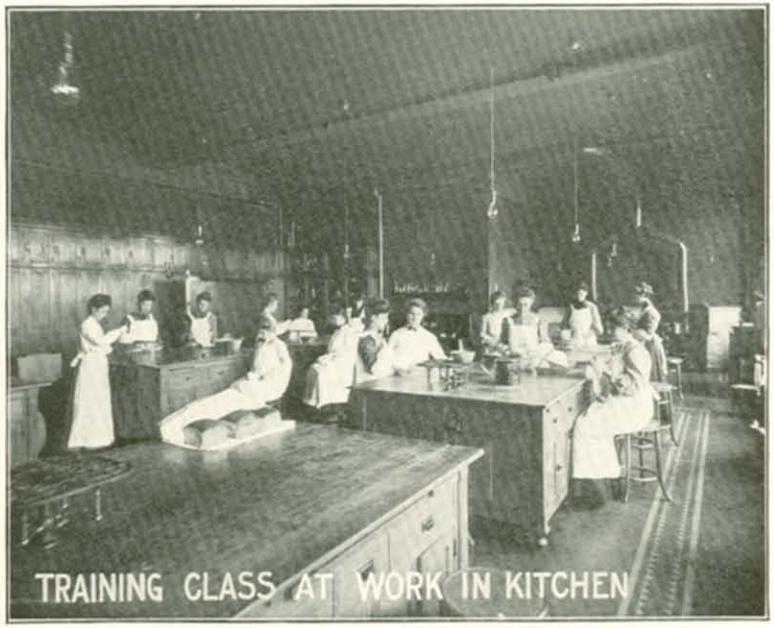
Students wishing to prepare themselves to teach in elementary schools only, may take the preceding course, except that they will substitute **Hand Work for Primary Grades,** of the Manual Training Course for Elementary Schools, for such work in Groups II, III, and IV, as may be determined by the Director of the school.

Time Limits.

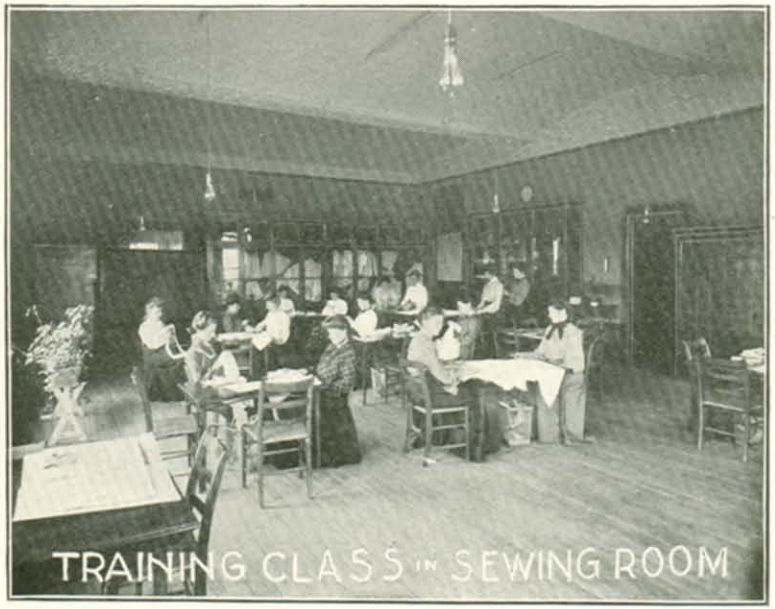
The Courses in Domestic Science are planned with the idea that 1,440 hours' work in class room and laboratory are necessary for the proper completion of the work in each course.

Tuition.

The tuition fee is one hundred dollars per year, one-half payable at the beginning of each semester. A small fee will be charged to cover the cost of material used in laboratories and kitchen.



TRAINING CLASS AT WORK IN KITCHEN



TRAINING CLASS IN SEWING ROOM

Outline, Kindergarten Training Course

JUNIOR YEAR.

First Semester.

Psychology	14 weeks
Kindergarten Theory	18 weeks
Kindergarten Technics	18 weeks
Freehand Drawing	18 weeks
Music	10 weeks
Expression	8 weeks
Physical Culture	18 weeks
Chorus Practice	18 weeks

Second Semester.

Kindergarten Theory	18 weeks
Kindergarten Technics	18 weeks
Freehand Drawing	6 weeks
Mechanical Drawing	12 weeks
Nature Study	12 weeks
Composition and Rhetoric	10 weeks
Physical Culture	18 weeks
Chorus Practice	18 weeks
Elementary Sewing (optional)	12 weeks
Observation of Kindergarten Work	18 weeks

SENIOR YEAR.

First Semester.

Kindergarten Principles	18 weeks
Pedagogics of Kindergarten and Primary Work	18 weeks
Child Study	18 weeks
Physical Culture	18 weeks
Chorus Practice	18 weeks
Teaching	18 weeks
Elementary Woodwork or Cooking (optional)	12 weeks

Second Semester.

Kindergarten Principles	18 weeks
Pedagogics of Kindergarten and Primary Work	18 weeks
History of Education	10 weeks
Literature	18 weeks
Physical Culture	18 weeks
Chorus Practice	18 weeks
Teaching	18 weeks

KINDERGARTENING

KINDERGARTEN CHILDREN IN NATURE STUDY

Tuition.

The tuition fee is fifty dollars per year, one-half payable at the beginning of each semester.

The courses in cooking, sewing and woodwork are optional; a tuition fee of ten dollars is charged for each of the optional courses.

Materials for occupation work are bought by students. The cost need not exceed eight dollars per year.

QUALIFICATIONS FOR ADMISSION TO THE TRAINING SCHOOLS.

Graduation from a four years' high school course, or equivalent preparation, will be required for admission to each of the Training Courses. The candidate must be at least seventeen years of age, and must be possessed of good health and physical energy, of natural fitness for the work, of refinement and good character. For admission to the Kindergarten Training Course some proficiency in music is desired, although students are not denied admission because of lack of such knowledge. Testimonials of good character are required.

Students who have completed a full Normal School course or who have had collegiate preparation, should be able to complete the Elementary Manual Training or Domestic Science Course in less than two years. How much less, will depend upon their ability, experience, and professional skill, to be determined after admission to the school. Students will not be required to remain a day longer than is necessary to properly complete a course for graduation, and will not be graduated under any circumstances without completing a course in a satisfactory manner. The aim is to make the work of the schools so strong that their reputation will be of value to every student who graduates. Every aid, which can properly be given, will be extended to the graduates of the schools in securing positions.

Credits.

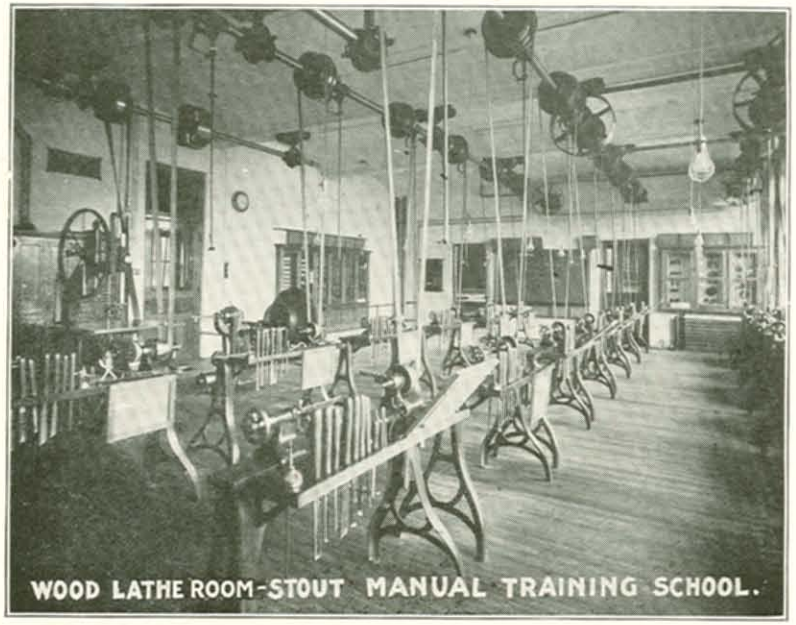
Credits will be given to students who have had Normal School or Collegiate training, in whatever work in the courses their present attainments may show them to be so proficient, as to make further study therein unnecessary.

Time of Entrance.

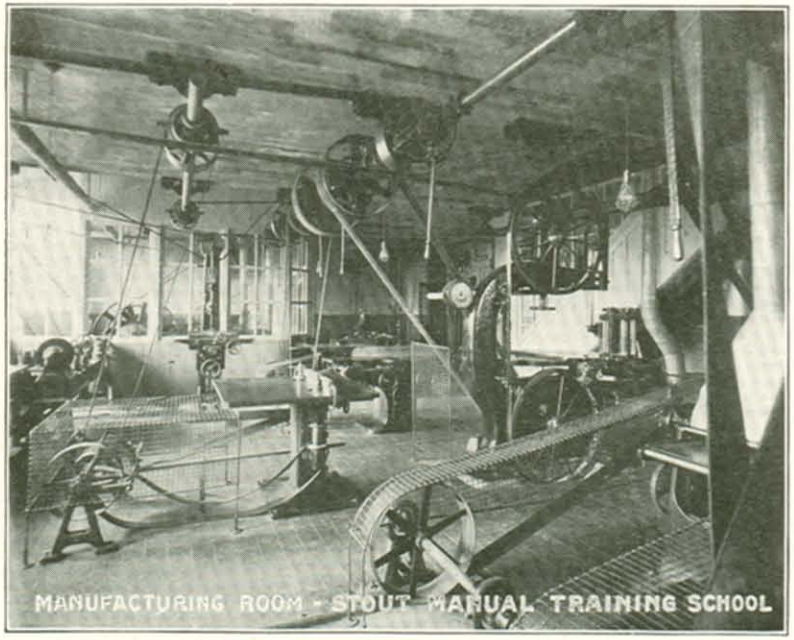
Students should arrange to enter at the beginning of the school year if possible.

Cost of Living.

Board and room can be obtained at prices ranging from four to five dollars per week.



WOOD LATHE ROOM-STOUT MANUAL TRAINING SCHOOL.



MANUFACTURING ROOM - STOUT MANUAL TRAINING SCHOOL

Inducements for Teachers to Prepare Themselves for Work in Manual Training and Domestic Science.

The present demand for competent teachers of these subjects in the elementary schools, is larger than the supply. In almost every other department of teaching, the supply exceeds the demand.

In many localities, teachers are sought who can teach some of the common branches during a portion of the day and carry on work either in manual training or in domestic science for the remaining part of the day. Better salaries are paid this class of teachers than are paid those who can do work in the common branches only. Manual training or domestic science once introduced in a system of schools, even in a small way, expands until the full time of a teacher or of several teachers is demanded for its successful administration.

In other localities, manual training and domestic science are being introduced in connection with the high school work. A great difficulty is experienced in securing competent teachers. Good salaries are paid teachers who are properly prepared for carrying on the work in the high schools.

For the manual training work in the grades below the high school and especially in the lower grades, women are as successful as men when they have received the proper training. The fact that the two training schools are carried on in the same building, makes it possible for teachers to prepare themselves both for teaching domestic science and for the elementary work in manual training.

Demand for Trained Kindergarteners.

Since the organization of the Kindergarten Training School in 1899, its graduates have been in demand. In nearly every case positions have been secured for the next year, before graduation.

Aims of the Schools.

In the administration of these courses it will be the aim to prepare teachers who will be competent to organize work, in the different fields for which they have been prepared, in connection with existing public school systems. While the students taking these courses will have the benefit of a far better equipment than can be provided in most systems of schools, they will be trained with reference to the development of power and skill in organizing and carrying on work under such conditions as to equipment, as can be supplied easily in any village or city school system. The professional side of the work, that of training to teach others, will be made a prominent feature throughout the courses.

The idea that because a person knows a subject, he can therefore teach it, is no more true in dealing with these subjects than with any other.

In the early experiments in manual training, it was thought that artisans who were skilled in the handling of tools were proper per-

sons for teachers. Experience wherever this experiment has been tried has shown the fallacy of the idea and has led to its abandonment. Among those competent to judge, it is now recognized that proper instruction in manual training and domestic science demands the application of the same pedagogical principles, as does good teaching in any subject, and the teachers must be trained not only to do the things which their pupils are to do, but they must also be trained to teach pupils how to do these things, and must train them in doing them.

State Recognition of Diplomas Issued to Graduates of the Training Schools.

The laws of the State authorize the State Board of Examiners to recognize the diploma issued from these training schools, as the basis for the issuance of a life certificate; entitling the holder to teach subjects in the respective courses in the public schools of Wisconsin. State certificates issued in Wisconsin are recognized in most of the other states in the Union.

PROFESSIONAL WORK.

Psychology and Pedagogy.

The work in psychology and pedagogy is taken at the beginning of the Junior year and is limited to a consideration of principles, fundamental in character, and to the application of these principles in the actual work of teaching. Time will not permit the study of psychology as a culture subject. The students who have so studied it but have not given consideration to the application of its fundamental principles in teaching, will need to take the prescribed course.

Those principles of pedagogy are considered which may be shown to have a practical application in the teacher's work. In the academic, shop and laboratory work, it is the aim of the teacher not only to have students master the special work under consideration, both from the academic and the technical standpoint, but at the same time to consider the work from the standpoint of the teacher. The following are some of the questions which are considered:

What extent and variety of mental activity are demanded for the guidance and control of different forms of motor activity required in different exercises?

What is the educational value of a given exercise measured in terms of mental activity and manual skill?

At what stage in the pupil's development is a given exercise demanding definite forms and amount of mental and manual activity best adapted to his needs?

What do the previous work of pupils and their present capabilities prepare them for in the way of succeeding systematic exercises designed to develop a high degree of skill in a single form of motor

activity, or, to develop a wider range of motor activities in which a high degree of skill is not the chief aim?

What are the steps in order in the working out of any given exercise?

What work in the line of the pupil's present interest is he prepared for and what is best adapted to his needs for training purposes?

How may pupil's interests be developed in profitable lines of constructive work, collateral to the required work of the course?

These and other professional questions are kept before the students in all their class work. In this way they are prepared, in the latter part of the Junior year to do intelligent work in the observation of teachers in the different grades of the public schools, as they have some basis of principle to guide them in their observation. They have learned to recognize the necessity on the teacher's part of establishing right relations in the pupil's mind and they are alert to determine whether such relations are being established, and if not, why not, and if they are, in what manner.

Organization and Management of Manual Training and Domestic Science Classes in the Public Schools.

The following are some of the topics discussed under this head:

Scope of work to be undertaken under given conditions.

Work which should be undertaken when a gradual introduction of manual training or domestic science into the school system is contemplated.

Proper amount of time to be given to manual work in different grades.

The relation of manual work to other work in the course of study.

How to find a place for manual work without overcrowding the course.

Character and cost of equipment for Wood-Working, Cooking, Mechanical Drawing, Wood Turning, Pattern Making, Molding, Forging and Machine Shop practice, Installation of Equipment.

Work of Manual Training or Domestic Science instructor as a class teacher, as a supervisor, and as an instructor of lower grade teachers in construction work.

Educational values of different classes of work as determining their place in the course of study.

Individual and class instruction,—possibilities and advantages of each.

Proper control of classes in manual work.

Modes of interesting the public in the manual work of the schools.

Economy in selection and use of material for the purpose of keeping down expenses.

Opportunities afforded in manual work for training in oral expression.

General correlation of manual work with the other work of the school.

History and Literature of Manual Training.

This work is carried on by means of lectures by teachers and assigned readings. Following are some of the topics considered:

Historical development of manual work as a part of the public school course of instruction.

Its right to a place in the course of study.

Its present status in the public schools.

Its probable future development.

Observation of Teaching and Practice Teaching.

Throughout the Senior year the students are required to systematically observe the work of experienced teachers in conducting classes in their respective lines of work in the public schools. The observation work is under the direction of members of the training school faculty. The observation required is not simply a "looking-on"; the teachers in charge direct the attention of the observers to definite aims, methods and results. Methods of different teachers in the instruction and control of classes are studied, not to be copied, but to determine how far they are based on sound pedagogic principles. The work under observation is discussed by those observing and the teachers in charge of the observation classes. Weaknesses are pointed out and the reasons for the weakness shown from a pedagogic standpoint. The strong work is noted and the reasons for its strength discussed. The aim in this work is to make students familiar with the application of psychological and pedagogical principles through a careful observation of the various ways in which these principles are applied by different teachers in different phases of the work. After the observation work has been continued for a reasonable time, students are put in charge of classes in manual work and are given practice on different phases of the work in different grades. Before beginning practice teaching in any grade, students are required to thoroughly familiarize themselves with the work outlined in the course of study for that and lower grades and by observation of the class, to determine what progress has been made in the course and what are the next steps in order. Before taking charge of the classes, they are required to prepare definite plans indicating the proper order of procedure. The practice teaching is done under the supervision of the special teacher of the particular line of work in which the instruction is given. In the class work of the regular teachers in the training schools, an effort is made to bring into the consciousness of the students the pedagogical principles upon which the work of the teachers is based.

The opportunities for observation and practice teaching in a system of schools having well organized courses in Manual Training, Domestic Science, and a complete system of Kindergartens, can not be over-estimated.

Educational Advantages of Menomonie.

Menomonie is a beautiful city located 64 miles east of St. Paul on the C. St. P. M. & O. R. R. It has a first-class public school system, supplemented by the Stout Manual Training and Domestic Science schools, open to all pupils in the public schools.

Work in the public schools in drawing, music, manual training, domestic science, and physical training is under the direction of special teachers, thoroughly trained for their respective lines of work.

A complete system of kindergartens under the supervision of the director of the kindergarten training school prepares pupils for the grade work.

The Dunn County Training school for the preparation of district school teachers, and the Dunn County School of Agriculture and Domestic Economy for graduates of the country schools, are both located within a stone's throw of the Manual Training building. Wisconsin is the only state in the Union having schools of either class, and the Dunn county schools of these classes were, with those in Marathon county, the first organized in the state.

A gymnasium and natatorium built and equipped by Mr. Stout at an expense of $75,000, with two teachers constantly employed, provide for a thorough system of physical training for the public school pupils, teachers, and such citizens as care to avail themselves of its advantages.

Training School students have the use of the well equipped laboratories for science work in the adjoining building, of the complete equipment of the Manual Training building and of the Physical Training building.

The Mabel Tainter Memorial Library, erected and maintained by one of Menomonie's public-spirited citizens, is one of the best in Wisconsin, and is open to the pupils and teachers in the public schools, and to students in the training schools. Special attention is given to providing books needed for the educational work in the city.

The Stout Manual Training school has a wide reputation, which will be of advantage to the students and graduates from the training schools, in securing positions after graduation.

No other city in the United States presents such a variety of schools devoted to elementary and secondary education and the preparation of teachers for these fields.

For further information address

L. D. HARVEY,
Supt. Stout Training Schools,
Menomonie, Wis.

STUDENTS 1903-04.

DOMESTIC SCIENCE DEPARTMENT.

Seniors.

Hodge, Alice M.....Fort Atkinson, Wis.
Lowater, Nina.....Rock Elm, Wis.
McMahon, Mrs. Alma W.....Ripon, Wis.
Schurtz, Anna.....Negaunee, Mich.
Schurtz, Helen.....Negaunee, Mich.

Juniors.

Clark, Jessie I.....Baraboo, Wis.
Daggett, Florence J.....Madison, Wis.
Dahlberg, Edith A.....Clear Lake, Wis.
Dickinson, Mabel.....Fond du Lac, Wis.
Gallaway, Louise M.....Menomonie, Wis.
Hansis, Martha M.....Kenosha, Wis.
Heller, Frances R.....Menomonie, Wis.
Johnston, Margaret L.....Ellsworth, Wis.
Laughlin, Katherine.....Dodgeville, Wis.
Lesure, Madge.....Menomonie, Wis.
McKay, Olive.....Chippewa Falls, Wis.
Meiklejohn, Martha H.....Fond du Lac, Wis.
Newsom, Emily M.....Menomonie, Wis.
Richards, Eva.....Racine, Wis.
Steendahl, Jeanette.....Menomonie, Wis.
Strong, Sara P.....Fort Atkinson, Wis.

MANUAL TRAINING DEPARTMENT.

Seniors.

Bonell, John A.....Menomonie, Wis.
Thompson, Victor E.....Menomonie, Wis.

Juniors.

McComb, Harvey G.....Milton, Wis.

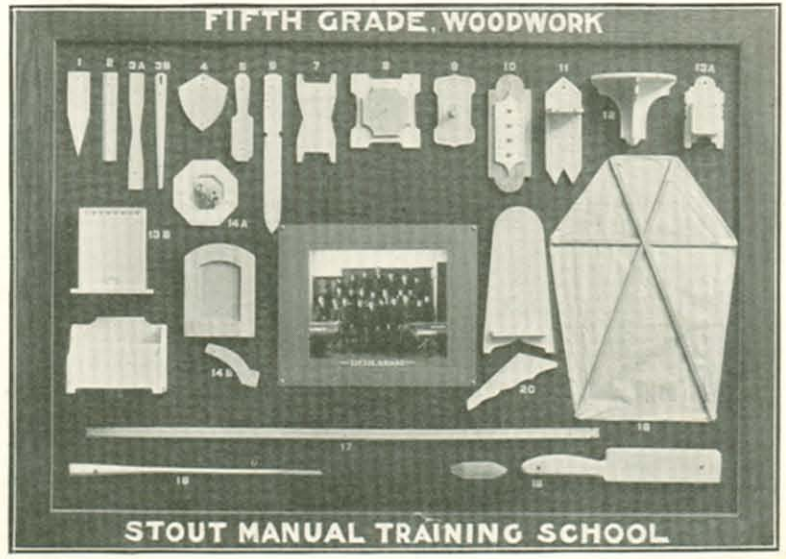
KINDERGARTEN DEPARTMENT.

Seniors.

Bennett, Alice L.....Stanton, Wis.
Blank, Nina O.....Reedsburg, Wis.
Bundy, Lydia.....Menomonie, Wis.
Butterfield, Gertrude F.....Merrill, Wis.
Caesar, Lillie.....Rice Lake, Wis.
Callahan, Ida.....Cumberland, Wis.
Carney, Mayme G.....Hammond, Wis.
Davis, Maud.....La Crosse, Wis.
George, Mary.....Chetek, Wis.
Johnson, Anna.....Eau Claire, Wis.
Kelly, Katherine.....Eau Claire, Wis.
Richardson, Florence E.....Ablemans, Wis.
Sargent, Bessie W.....Oconto, Wis.
Toft, Helga.....Menomonie, Wis.
Willey, Pearl.....Madison, Wis.
Worthington, Franklin.....Richland, Ia.

Juniors.

Adams, Jessie.....Fairchild, Wis.
Champagne, Estelle.....Merrill, Wis.
Dayton, Almeda.....New Richmond, Wis.
Dillon, Lelia.....Mondovi, Wis.
Dudgeon, Wanda M.....Madison, Wis.
Farquharson, Blanche.....Prescott, Wis.
Field Eleanor.....Osseo, Wis.
Field, Martha A.....Osseo, Wis.
Holm, Johanna.....Chippewa Falls, Wis.
Knight, Georgia L.....New Richmond, Wis.
Lawler, Mary M.....Menomonie, Wis.
Morris, Helen M.....Chippewa Falls, Wis.
Reek, Hazel E.....Delavan, Wis.
Silverthorn, Hermione.....Wausau, Wis.
Smith, Hatty L.....Fort Atkinson, Wis.
Sumner, Elizabeth L.....Delavan, Wis.
Thom, Elsie.....Madison, Wis.
Varnell, Eva.....Baraboo, Wis.
Wilcox, Mary E.....Eau Claire, Wis.



Courses in Manual Work

IN THE

Menomonie Public Schools

1904-5

THE FOLLOWING COURSES GIVE IN OUTLINE THE MANUAL WORK IN ITS PRESENT STATE OF EVOLUTION IN THE MENOMONIE SCHOOLS.

No attempt is made to show the correlation of this work with other subjects in the course of study.

The aim is to set forth the scope and character of work undertaken under the names of Manual Training, Domestic Science and Drawing.

Such modifications of the courses will be made as further experience may show to be desirable.

Manual Training.

General Purpose. To give the pupil a broad experience in using a number of materials and tools which not only affords a variety of mental activity and discipline, but which gives a large opportunity for self-expression and progressive individual growth.

The underlying idea in the course is to present a certain amount of prescribed work, involving such fundamental and related operations as seem necessary for the best development. Accompanying the prescribed work, opportunity and encouragement are given to each individual to show his originality and to exercise his inventive powers, either in making a variation of the models or in the form of free work. This work can not be shown here.

Free work growing out of pupils' own needs or needs of school is limited by the pupils' capacity and the skill acquired from the regular exercises.

The bringing of principles and their application into close relation throughout the course, tends to vitalize it and aids the student to make a more rational progress through an understanding of, and interest in, the work.

Grade Courses.

KINDERGARTEN.

Paper Cutting. 1. Cutting to lines. 2. Simple free cutting. (a) Angular objects; (b) Free curved objects. 3. Simple geometrical cutting. 4. Simple folding and cutting based on 8x8 in. squares. 5. Symmetrical cutting based on the ½ and ¼ folds of the square and oblong.

Building Blocks. Use Froebel's larger gifts, in simple combinations, to represent things within the child's environment.

Sand Pile. The activities of play life are encouraged here as a means of recreation and development.

Clay. Mass work in modeling geometrical forms and then applying these types to fruits, vegetables, simple instruments, etc.

FIRST GRADE.

Paper Cutting. 1. Free cutting illustrating stories, songs, trades, and games.

2. Geometrical cutting (½ in. margin)—Advanced Work.

3. Folding. (a) Geometrical folding and cutting of 8x8 in. squares resulting in a construction whose sides have definite dimensions which the pupils are able to measure. (b) Simple folding.

4. Symmetrical cutting. A continuation of the Kindergarten work but embracing a wider field.

Card Board. Paper and card board work based on geometrical forms has a special educational value in its application to the concrete number work which is carried on in the primary grades. The sequence of models is therefore arranged with a view toward assisting the development of this concrete or constructive number work, as well as embodying such forms of training as are obtained from this phase of constructive work.

Materials Used: Two-ply and three-ply paper, punch, ruler (having one side graded to ½ in. and the other side graded to ¼ in.), scissors, and silk floss. Models: The Ruler, Shipping Ticket, Book Mark, Note Book, Pin Wheel, etc.

Clay. Three proportions as mass work, making the bowl, saucer, jar, jug, adobe house, etc.

Textiles. The making of pasteboard looms with warp threads ½ in. apart used in the construction of hammocks. Material: Coarse wool roving, wicking or cotton cord.

SECOND GRADE.

Paper Cutting. 1. Free cutting continued from first grade and more advanced subjects taken from poses, stories, etc.

2. Symmetrical cutting is carried on up to the ⅛ fold of the square, oblong, triangle, etc., with the attention directed towards its application to the art work, and becoming more and more a phase of it.

Card Board. New Tools and Materials: Four-ply paper, circle maker, paste applied with toothpick, and ruler having one side graded to ¼ in. and the other to ⅛ in. Models: Blotting Pad, Mat, Picture Easel, Handkerchief Case, Pen Wiper, etc.

Clay. 1. Three proportion work emphasizing essential detail. (a) Tile form work through the outlining and the 'building up" methods. (b) Greek and Indian pottery with their characteristic designing. (c) Original designing of vase forms.

Textiles. The weaving of a rug, dish cloth, bag, or curtain, upon a paper box loom, which has been made previously by the pupil.

Designing in border patterns.

Raphia. Simple work in wrapping, making a napkin ring, waft pocket, or broom holder.

THIRD GRADE.

Card Board. New Tools and Materials: Ruler graded to 1-16 in., a 6-in. 45 degree triangle, compass, skew knife, desk board, and five-ply and six-ply paper. Models: Cubical Money Box, Pencil Holder, Post Card Box, Button Basket, etc.

Clay. 1. High relief panel work using geometrical and conventional flower designs.

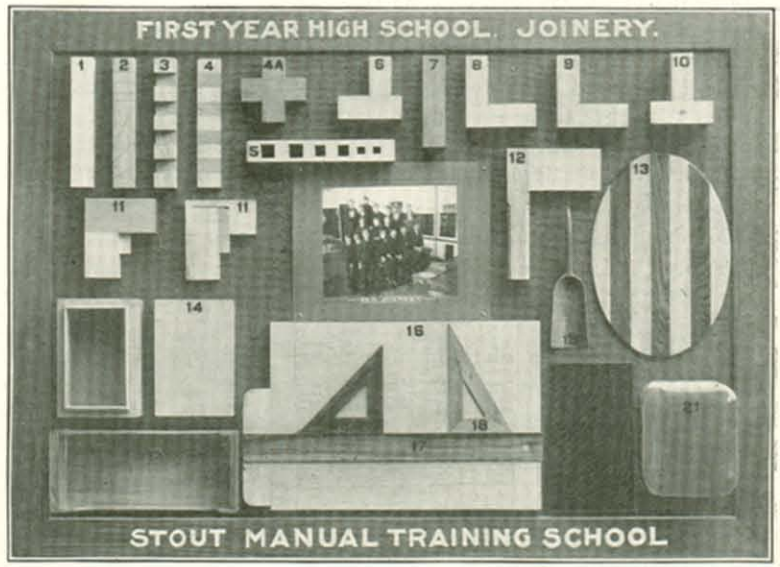
2. Simple statuary work such as animals at rest or in action, etc.

3. Study of modern pottery: (a) Potter's wheel. (b) Preserving and hardening of clay in kiln. (c) Decoration by means of pigments. (d) Glazing.

Textiles. A study of the development of weaving up to the wooden hand loom, shuttle, and heddle stage. Pupils will use these inventions in the making of a woolen rug, mat, or silkoline hand bag. The work is correlated with that of the Art Department through a study of simple center piece designing, in connection with the water color work.

Pupils will use the more simple designs in their weaving.

Raphia. Braided in three strands resulting in a work box, doll hat, or card receiver.



FOURTH GRADE.

Card Board. The making of useful models embracing some of the more difficult geometrical forms.

New Tools: A six-inch 30-60 degree triangle, a two-foot ruler, and heavy jute and pulp boards.

Models: Cylindrical Pencil Box, Equilateral Triangular Fancy Box, Taper Holder, Waste Basket (based on the quadrangular prism), etc.

The latter part of the year will be devoted to such work in book repairing as is adapted to pupils' capacity and training, such as replacing loose leaves, repairing torn leaves and frayed corners, gluing supers, and sewing and gluing loose sections, etc.

Clay. Continuation of Third Grade work: (a) Representative groups such as Birds' Nest and Family, Plate of Fruit, Feudal Castle, King Arthur's Tournament, etc. (b) Simple molding and casting in plaster of Paris, using gelatine and sand molds.

Textiles. 1. A study of modern machine weaving.

2. A weaver's loom, made by the High School joinery class, may be used by a special group in the making of a "union rug."

Raphia. 1. A strap stitch Raphia Basket. 2. Original Raphia Basket decorated in a simple color design using the button hole stitch.

Note.—The amount of work required in basketry is not great because of its limited educational value. Variety of training instead of technical skill in a narrow field is the work of the public school.

Woodwork. Purposes: To give such fundamental exercises in the use of the knife and simple bench tools as are needed in bringing out and applying the basic principles of Sloyd work. The woodwork in the last half of the fourth grade and through the first half of the fifth grade, is centered in its development about the simplest of tools—the knife. All other tools are a modification of the knife or wedge idea; and so in this elementary work these tools come in as conveniences by which the mastered knife exercises may be more speedily accomplished as they re-appear in the course.

Materials: ½, 3-16 and ¼ in. strips of pine or basswood.

Tools Used: Pencil, Sloyd Knife, Try-Square, Back Saw, Coping Saw, Hammer, Nails, a Special Smoothing Plane, Bench Hook, and File.

Models: 1. Name Plate, involving knife exercises, No. 1 straight edge cut; No. 2 cross cut. 2. Plant Stick, involving knife exercises, Nos. 1, 2, and 3 oblique cut.* 3. Ruler. 4a. Warp Stretcher. 4b. Weaving Needle. 5. Shipping Tag. 6. Match Scratch. 7. Pencil Sharpener. 8. Paper Knife. 9. Fish Line Winder. 10. Paper File. 11. Blotting Pad.

* Note—Space does not permit stating the different knife exercises involved in the balance of the course. When two models are marked a, b, under the same number, only one is required

Later on pupils make simple constructions derived from their play life in its imitation of adult activity. Some of these are Wagons, Furniture, Wheel Barrow, Bank, Bird House, etc.

FIFTH GRADE.

Woodwork. Continuation of the fourth grade course, with the attention directed toward problems which require a consideration of the third dimension. This calls for greater manual dexterity in the handling of ¼, ⅜, and ½ in. lumber.

Models: 12. Key Rack. 13. Tooth Brush Holder. 14. Bracket Shelf. 15a. Match Box. 15b. Postal Card Box. 16a. Octagonal Picture Frame. 16b. Photo Holder. 17. Letter Rack. 18. Bow (ash wood). 19. Arrow. 20. Tip Cat and Bat. 21. Easel.

As an application of the previous work the problems of kites are taken up. Ten different kinds are made through individual work. These problems bring out the squaring of the sticks in three dimensions, half and half knife joints, and constructive thinking which considers strength, balance, lack of weight and aëro-planes.

Bent Iron. The use of this material gives opportunity for a limited number of valuable experiences in Art and Constructive work which are not brought out in any of the other materials.

Eight fundamental elements and their simple combinations are used as a basis in executing the following models: 1. Pen Rack. 2. Tea Mat. 3. Easel. 4. Bridge. 5. Candle Stick. 6. Picture Frame. 7. Glass Holder. 8. Wall Pocket. 9. Lamp Shade. 10. Hall Lamp.

Bent iron can be handled easily in an ordinary school room, inasmuch as it is tidy work and as the equipment requires little space for storing when not in use.

SIXTH GRADE.

Models: 1. Sawing Exercise—Involving squaring with try-square and pencil, cross cut sawing, gauging with marking gauge, rip saw cut, and diagonal miter saw cut. Resultant Hexagon to be used as center part of ring toss.

2. Ring Toss—New Exercises: planing an edge, boring of holes, and pivot fitting.

3. Bread Board—New Exercises: the seven primary steps for "squaring up" a board; chip carving of center design.

Note—Space does not permit stating the different exercises involved in the balance of the sixth grade work.

4a. Scouring Board. 4b. Whisk Broom Holder. 5. Coat Hanger. 6. Shelf (original). 7. Blotting Pad. 8. Teapot Stand.

SEVENTH GRADE.

Woodwork. In this grade there is made more thorough study and application of the principles gained in the preceding work.

Models: 1. Sand Paper Block. 2. Book Rack. 3. Foot Stool. 4a. Snow Shovel. 4b. Sled. 4c. Ski. 5. Boot Jack. 6. Blacking Box. 7. Axe Handle. 8. Medicine Cabinet (Free work); this project must not involve new exercises.

Note—Projects 4a, 4b, and 4c depend upon the environment of the school. Each of the three projects will be assigned according to the ability and needs of the individual.

Before beginning actual work on a model a working drawing is made, and the different parts are laid out with a view to economy of material and labor.

Special attention is given to the proper care of tools in regard to fine adjustments and keeping a "working edge."

EIGHTH GRADE.

Woodwork. The first half of the year is devoted to a culmination of the aims stated in the Seventh grade, with the added idea of bringing in tools such as gouges, beveled gauges, scrapers, etc., which call for finer control of the hand.

In the second half of the year, the potentiality gained through the previous discipline is given freedom in the form of original work. This causes a higher appreciation of the value of advanced technics and an awakening interest in processes, the mastery of which is essential to further advancement in the field of construction.

Models: 1a. Pen Tray (pine wood). 1b. Pen Tray (glued up in strips). 2. Ink Stand. 3. Knife and Fork Box (concealed mortise and tenon joint). 4a. Clothes Rack (dowel joint). 4b. Whisk Broom Holder. 5. Towel Roller (dove-tail joint). 6. Picture Frame (butt mitre joint). 7. Free Work.

A variety of original projects involving the application of previous principles constructed by individuals, groups, or class, such as: Step Ladder, Plate Rack, Tool Rack, Tabourets, Tables, Umbrella Stand, Collar and Cuff Box, Working Benches, Cloth Loom, Book Case, Chairs, etc.

High School Courses.

COURSE IN JOINERY.

Purpose: To instill a knowledge of the principles of joinery by teaching the use and care of wood-working tools. To develop skill in their use by means of progressive exercises involving the different tools and a series of the different joints used in joinery. The applications of the joints are shown in the construction of a few finished products.

Exercises.

1. Planing, squaring stock up to given dimensions. Tools used: Saw, square, plane, knife and gauge.
2. Sawing. Use of bevel and steel square.
3. Chiseling. Tools used: Plane, square, knife, saw and chisel.
4. Inlaying blocks.
5. Mortising. Use of mortising chisel and mortising gauge.
6. Mortise and tenon joint.
7. Splice.
8. Open double mortise and tenon joint.
9. Dovetail joint.
10. Double mortise and tenon joint with pin.
11. Keyed mortise and tenon joint.
12. Mortise and tenon with relish.
13. Elliptical mat. Practice in gluing. Laying out an ellipse.
14. Dovetail box. Application of dovetailed joint.
15. Lap dovetail card index drawer.
16. Drawing board. Use of plow in tongue and groove joint.
17. T square.
18. 45 deg. triangle. 30 and 60 deg. triangle.
19. Scoop. Gouge practice.
20. Finish piece. Illustrating filling, staining, varnishing and rubbing.
21. Handkerchief box. Tongue joint. Application of rubbed finish.

Joinery is given three seventy minute periods each week during the year.

COURSE IN WOOD-TURNING.

Purpose. To familiarize pupil with wood-turning tools and lathe operations, the requisite skill being acquired by means of exercises embodying the various methods. The course follows and is supplemental to that of joinery, the whole forming a foundation for the succeeding work in pattern making.

Exercises.

1. Plain cylinder. Involving: Use of gouge in roughing and finishing; centering and preparing stock for lathe; sharpening tools; speed of lathe.
2. Use of turning or skew chisel.
3. Additional practice with turning chisel.
4. Concave turning with gouge.
5. Convex and concave turning. Practice with chisel and gouge.
6. Chisel handle. Polishing in lathe.

7. Turning tool handle.
8. Mallet.
9. Bracket. Relation of bench and lathe work.
10. Egg.
11. Rosette. Face plate work.
12. Additional face plate work.
13. Ring. Making and use of chuck.
14. Plate. Practice in chucking.
15. Goblet. Inside turning.
16. Napkin ring. Finishing on mandrel.
17. Hat rack. Practice in assembling.
18. Towel rack. Plain and face plate work combined.
19. Candelabra. Same as above.
20. Mirror frame. Built up work.

Wood turning is given during the first six weeks of the second year, three seventy-minute periods each week.

COURSE IN PATTERN MAKING AND MOLDING.

Purpose. To give pupils practical acquaintance with typical shop processes employed in pattern making. This is accomplished by making a series of patterns, from the simple solid pattern to the more complex parted and cored patterns, each exercise illustrating some new or special method practice in molding.

Exercises.

1. Ribbed pattern. Illustrates draft and shrinkage. Molding entire mold made in newel; care in packing flask; gate cutting and venting. Finishing of pattern.
2. Shoe. Illustrate internal draft. In molding, same principles as above are employed.
3. Plain wrench. Use of match in molding. Half of mold made in each flask.
4. Wrench. Same as above. Practice in molding with irregular parting plane.
5. Dumb-bell. Simple two-part pattern.
6. Coupling. Two-part pattern with plain core.

6A. Core-box for No. 6.

7. Gland. Two-part pattern; irregular core.

7A. Core-box for No. 7.

8. Pipe tee.

8A. Core-box for No. 8.

9. Pipe return bend. Split pattern. Setting core with chaplets when molding.

9A. Core-box for No. 9.

10. Cylinder. Split pattern. Balanced core.

10A. Core-box for No. 10.

11. Pillow block. Special or D core print.

11A. Core-box for No. 11.

12. Face plate. Illustrates allowance for finish. In molding, setting a vertical core.

12A. Core-box for No. 12.

13. Grooved pulley. Solid pattern. Molding by means of a core.

13A. Core-box for No. 13.

14. Grooved pulley. Split pattern. In molding, use of cheek or three-part mold.
15. Wheel. Built up pattern. Construction of wooden face plate.
16. Stop-cock. Illustrates more complicated coring.

16A. Core-box for No. 16.

16B. Valve stem for No. 16.

16C. Core-box for No. 16.

17. Jack screw. Ribbed pattern. Use of fillets.

17A. Core-box for No. 17.

18. Built up work.

Pattern making is given during the last 30 weeks of the second year in the High School, three seventy-minute periods each week.

COURSE IN FORGING.

Purpose. To teach, by means of a progressive series of models, the fundamental principles of forging, each new model containing a new principle combined with some previously taught.

Exercises.

1. Drawing out stock to a square cross-section of given dimensions.
2. Ring. Drawing stock of irregular dimensions to round cross-section and bending.
3. Drawing stock flat and bending.
4. Double Ring or Figure Eight. Same as Ex. 3.
5. Gate Hook. Drawing, tapering, bending and twisting. Fullering upon edge of anvil.
6. Angle. Forged from ½-in. stock, fullered and drawn to ¼-in., leaving enough surplus metal in center to form a square corner.
7. Cross Bar for Trace Chain. Forged from ½-in. round iron. Upsetting, drawing to taper, bending and punching.
8. Model bringing in the use of the finishing tools, the fuller, the swage and the flatter. Principles involved: Upsetting, fullering, drawing and swaging.

9. Fork. New principle involved, splitting.
10. Practice in punching, splitting, bending at right angles. Finishing with flatter and swage.
11. Hook. Upsetting in heading tool. Fullering, drawing, upsetting, bending and drilling.
12. First exercise in scarf welding.
13. Flat Ring. Scarf weld.
14. Ring and Eye. Scarf and lap weld.
15. Bolts. Welded heads. Practice in screw cutting.
16. Hook and Chain. Practice in assembling.
17. Tongs. Principles involved: Fullering, drawing, punching, riveting and welding.
18. Lathe Tools. Round nose. First exercise in working steel. Tempering.
19. Threading tool.
20. Cutting off tool.
21. Boring tool.
22. Side tool.
23. Diamond point tool.
24. Fork. Additional practice in working steel.
25. Hardie.
26. Set Hammer. Use of punch and drift.

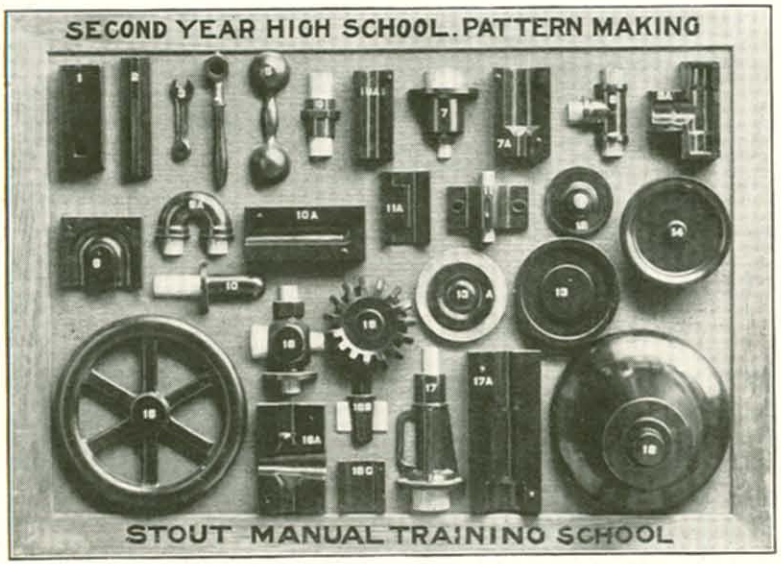
The Forging Course is given in the third year of the High School, three seventy-minute periods each week.

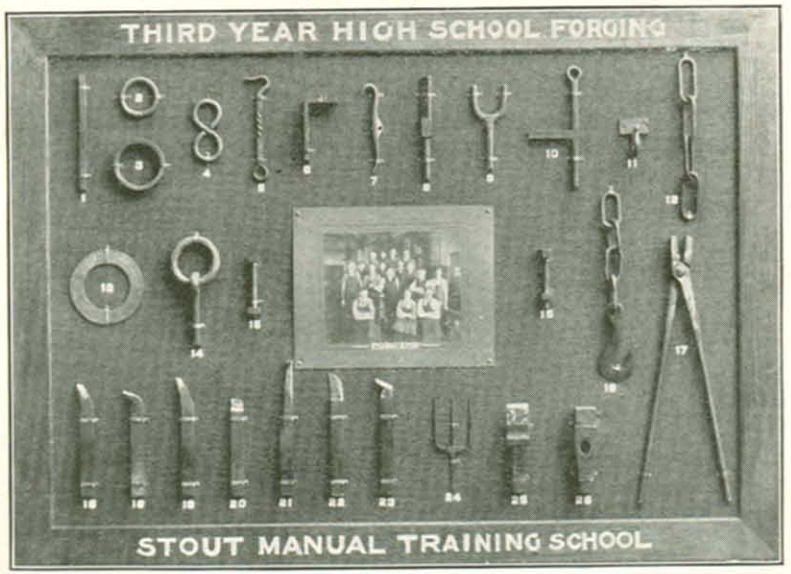
COURSE IN BENCH WORK AND MACHINE SHOP PRACTICE.

Purpose. To teach some of the fundamental operations in bench and machine tool work. This is accomplished by the making of practice pieces (not necessarily objects of direct practical use), the construction of which involves the typical use of one or more tools, the order in which these are given being determined by educational principles.

Exercises.

1. Marking out work; use of flat chisel in chipping narrow surfaces. Cast Iron.
2. Chipping a broad surface; use of flat and cape chisel. Cast Iron.
3. Cutting key-way in a shaft; use of prick punch; key-seating rule and drill press. Machinery Steel.
4. Filing chipped edges of piece of Ex. 1. Cast Iron.
5. Filing curved Templates used in the mechanical drawing course; polishing flat surfaces. Sheet Iron.
6. Filing surfaces square with each other; also at 120°. Cast Iron.





7. Filing to a fit; draw filing; polishing. Brass.
8. Laying out and drilling holes in required locations; riveting pieces at right angles. Wrought Iron.
9. Hand Turning in Speed Lathe; straight turning and turning to fit center gauge. Brass.
10. Oil-hole Cap. Hand turning and drilling in brass.
11. Oil-hole Plug. Curved work in hand turning in brass.
12. Brass Ornament. More difficult hand turning in brass.
13. Desk-rail Standard. More difficult hand turning in brass.
14. Grinding a set of lathe tools for use in Armstrong Tool Holders. "A," Right and Left Diamond Points. "B," Right and Left Side Tools. "C," Right and Left Round Nose Tools. "D," Threading Tool. Self-Hardening Steel.
15. Use of Shaper and Hand Taps. Cast Iron.
16. Centering, countersinking, squaring (at one end only), turning and beveling. Piece just as smoothing tool left it. Cast Iron.
17. Squaring up to a shoulder; rounding an edge. Head only filed and polished, the body of pin being as the turning tool left it. Machinery Steel.
18. Chucking and Boring in the lathe. Cast Iron.
19. Cast Iron Plug. Taper turning, ¾ in. taper per foot. Fits in piece of Ex. 20.
20. Taper boring, taper ¾ in. per foot. Cast Iron.
21. Outside Thread Cutting, U. S. Standard Thread. Fits in piece of Ex. 22.
22. Inside Thread Cutting. Cast Iron.
23. Nut Arbor. Cutting common V-thread; use of milling machine; case hardening. Machinery Steel.
24. Hexagonal Nut. Use of machine taps; "slabbing" on milling machine; squaring up, using Nut Arbor of Ex. 23. Machinery Steel.
25. Key-way milled in a shaft. Machinery Steel.
26. Use of Shaper in Square and Angular work; Sliding Fit. Cast Iron.
27. Gear Cutting. Use of Index Head on Milling Machine. Inside Key-way cutting. Machinery Steel.
28. Use of Planer in Square and Angular planing. Cast Iron.
29. Stand of Gears. Laying out and drilling holes an exact distance apart. Making running and driving fits. Gears and stand cast iron; studs. Machinery Steel.
30. Pipe Center. Turning taper to fit a given taper hole. Turning taper of cone by means of compound rest.

Machine shop practice is given in the fourth year of the High School, three seventy-minute periods each week.

COURSES IN DOMESTIC SCIENCE.

Purpose. The purpose is two-fold. It has to do, first, with the development of the individual and, second, through this, with the development of the home.

The general purpose is to present such fundamental principles and their application in systematic exercises and operations as shall give to the pupil habits of attention and exactness, the power of logical thought, a high ideal of the dignity of labor, and the ability to use her powers definitely and intelligently in the production of her ideal of perfection. At the same time there shall come to her, knowledge and experience that will be of direct use and effectiveness in her life and in her home.

To this end, the course includes a definite amount of study and systematic application that must precede the working out of individual ideas and inventions, though opportunity is given in the application of known principles and operations for originality and self-expression. Underlying the whole course, popularly called Domestic Science, which includes Domestic Art, Domestic Economy and Domestic Science proper, is the purpose to teach the pupil to think clearly, logically and purposefully about whatever the operation in hand may be, and to carry into her own home the classified knowledge, experience, and effectiveness resulting from the work in this course.

Grade Courses.

SEWING.

Third Grade.

1. Practice Stitches on Canvas: Running, basting, waist-seaming, over-seaming, over-casting, catch-stitching, cross-stitching.
2. Invention: Application of stitches to some article of use, design by pupil.
3. Cotton Chart: Notes in cotton, growth, culture, etc.

Fourth Grade.

1. Hems and Hemming: Practice hems; paper—1″—½″—¼″; paper—square and mitred corners; cloth—½″ hem, square, and mitred corners applied to muslin square.
2. Application of Hems: Small doiley designed by pupil, outlined in running stitch; small pillow-case—scale, ¼″-1″.
3. Practice Band: Small ruffle on band.
4. Application of Band: Small gingham kitchen apron—scale, ¼″-1″.
5. Invention: Small quilt, handkerchief, etc.

6. Apron for Pupil: Material provided and work done by the pupil.
7. Notes on Cloth: Kinds, manufacture, etc.

Sewing in the Third and Fourth Grades is given in the regular school room under the direction of the grade teacher, two thirty-five-minute periods each week.

Fifth Grade.

1. Practice Darns: Design of plain weaving, weaving with yarn to learn stitch; design of square darn on paper, square darn in stockinet; design of pointed darn on paper; pointed darn in stockinet.
2. Application of Darns: Darning of stockings; designing of doiley, working of doiley with a combination of outline and darning stitch.
3. Doll's Outfit—scale ¼"-1": Drafting of pattern of skirts, drawers, chemise; making of garments from muslin; making of dress and hat.
4. Application of Preceding Principles. Simple dress for small girl, fitted usually to self.
5. Practice Darning in Cloth: Designs, darning on cloth of the following darns—straightway, bias, straightway bias, corner, patch.
6. Application of Darning: Darns put upon garments.
7. Compositions on uses, cost and manufacture of materials used.

Sixth Grade.

1. Practice Patching: Hemmed patches in gingham and calico; overseamed patches in gingham and linen; circular patches on striped materials and in linen.
2. Application of Patches: Towels, table-linen, garments.
3. Practice Stitches and Patches on Flannel: Fancy stitches, scallops, eyelets, seams, bindings.
4. Applications of Flannel Work: Small flannel skirt.
5. Practice Seams: Overcast, felled, French bound.
6. Practice Plackets: Hemmed, bound, bias, faced, gussets.
7. Compositions on gingham, flax, and wool in connection with materials used.

Seventh Grade.

1. Drafting of patterns for underclothes.
2. Application of preceding work in the cutting, fitting, trimming and making of a skirt, pair of drawers, corset cover or chemise and gown.

Sewing in the Fifth, Sixth, and Seventh Grades is given in the sewing-room of the Manual Training Building, two seventy-minute periods each week.

FOOD WORK.

Eighth Grade.

STUDY AND RECITATION-ROOM WORK.

1. **The human body:** General structure and physiology of the lungs, digestive organs, and organs of excretion; special study of digestion, absorption, metabolism and assimilation.
2. **The essentials of good health:** Good food, pure air, pure water, personal cleanliness, and intelligent care of the body.
3. **Foods:** Definitions; physical and chemical properties; classification according to compositions into proteids, carbo-hydrates, fats, mineral matters; discussion of each class including composition, digestion, use in the body, illustrations, and source of supply; the manner of growth, method of manufacture, and market value of common food stuffs under each class.
4. **Air:** Composition, physiological uses, oxidation in the body; Combustion—definition, essentials, fuels, products.
5. **Water:** Sources, kinds; chemical and physical properties; effects of heat and cold; physiological uses; use as cleansing agent.
6. **Field of study preparatory to kitchen laboratory work:** General care of the kitchen furnishings—tables, sinks, refrigerators, pantry, range, including the essentials of a good fire, laying of fire, management of drafts, and dampers; care of utensils; washing of dishes, towels, etc.; study of tables of weights and measures and abbreviations.

KITCHEN LABORATORY WORK.

1. **Experiments:** Proteids—the effects of various degrees of heat upon various proteids; carbo-hydrates, division into starches and sugars; structure of each, effects of various degrees of heat upon each; fats—structure, effects of heat, etc.; deduction of principle of cooking of each food class.
2. **Preparation of foods:** Proteids—cooking of eggs; carbo-hydrates—rice, sago, etc.; fats, chocolate; combinations of food classes—cereals, hot breads, light breads, simple cake mixtures, cookies, soups of all kinds, spring vegetables.

Food work in the Eighth Grade is given two seventy-minute periods each week during the year.

High School Courses

FOOD WORK.

First Year.

STUDY AND RECITATION-ROOM WORK.

1. **General review of Eighth Grade work,** with further elaboration of food classification and continued study of food stuffs with

reference to food materials contained, classifications and preparation for the market.

2. **Particular study of proteids:** Meats—Composition, food value, use in body, source, kinds—division into beef, pork, mutton, poultry, game; market appearance; cuts; cost; methods of cooking; methods of re-cooking each division; fish—composition, food value, use in the body, source, kinds—divisions into fish proper and shell-fish, subdivisions of each; relative food value; market appearance; preparations for use; methods of cooking, method of re-cooking; milk—composition, food value, use, adulterations, sterilization and preservation; products of milk—cream, butter, cheese; eggs—composition, food value, use, preservation, tests for freshness, methods of cooking; gelatine—composition, food value, use, how obtained, kinds, market appearance; method of using; principles of preparation.
3. **Study of markets:** Visits to various markets; study of cuts of meats; cost of materials; practical marketing; visits to mills and shops; buying of materials used by classes.
4. **Study of food preparation and combinations:** Necessity for varied diet; reasons for cooking foods; planning of menus with reference to food value; estimation of cost of menus; comparison of economic food value of various foods.
5. **Field of study preparatory to work in kitchen laboratory:** Continuation of work commenced in first year; care of the dining room and its furnishings.

KITCHEN LABORATORY WORK.

1. **Experiments:** Effects of heat and cold, hot and cold water, acids and salt upon proteid foods studied; further experiments upon carbo-hydrates and upon yeasts.
2. **Preparation of foods:** Proteids—Cooking of meats and fish of all kinds in various ways; preparation of milk to be used as a food, including its combination with vegetables, eggs, junket, etc.; cooking of eggs in various ways; preparation of gelatine; carbo-hydrates—flour mixture of all kinds; fats—preparation of various foods by frying; combinations of food classes—breads, beverages, simple puddings, cakes, fall vegetables.
3. Assistance rendered other classes in the preparation and serving of meals.

FOOD WORK.

Second Year.

STUDY AND RECITATION-ROOM WORK.

1. **Study of Dietaries:** Balanced rations, and practical menus for use in the home.
2. **Serving of Food:** Table furnishings—including linen, silver, crystal and china; laying of table; serving of breakfast, dinner, lunch and supper; duties of host, hostess and waiter; care of table furnishings.
3. **Study of markets:** Continuation of work commenced in previous year with, in addition, the marketing for all meals served by the class; the keeping of expense accounts, and the computation of exact cost per meal per person and the total cost for one day.
4. **Study of food materials:** Fruits—use as food, value as food, use of raw fruits, use of preserved fruits; methods of preservation—drying, canning, preserving, pickling—the use of each and principles and methods involved; care of fresh and preserved fruits; salads—classes, dressings, treatment of each class, study of materials used, garnishing and serving; pastry—composition, value as food, kinds, methods of preparation; puddings—food value, palatability, usefulness, kinds, materials used, methods of preparation; cakes—composition, value as food, kinds, material used, methods of preparation, including combination of materials; ices and ice-cream—division into classes, sherbets, ices, creams, etc.; food value, materials used, methods of preparation, freezing and serving of each.
5. **Preservation and adulteration of food materials:** Preservation by means of elevation and reduction of temperature, exclusion of air, compression, drying, extraction, use of antiseptic substances, use of acids and gases, use of special preservatives; adulterations not injurious to health; use of inferior goods; increase of bulk by use of cheaper food materials; adulterations injurious to health, including use of colors, chemical preservatives, materials having no food value; effects of food preservatives and adulteration; remedy—knowledge of food materials.
6. **Field of study preparatory to Invalid Cookery:** Study of conditions existing in common diseases; physiological effect of various food materials; hygiene and care of the sick room; the arrangement of dietaries suitable to different conditions; serving of foods.

KITCHEN LABORATORY AND PRACTICAL WORK.

1. **Preparation of foods:** Fruits—canning, preserving, pickling, and jelly making; salads—preparation of fruit, vegetables and meat salads; oil and egg dressings; pastry—pies and puff paste; puddings—creams, baked, boiled, steamed, and custard with various sauces; cakes—loaf and layer, with various fillings; frozen desserts—ices, sherbets, ice creams of various kinds; combination of foods in the preparation of meals.
2. **Invalid cooking:** Gruels, meats, ices, drinks, broths; preparation of the invalid tray.
3. **Preparation and serving of meals:** Marketing for, preparing and serving three meals by each group of girls. A purse of $2.50 is allowed, and from this provisions must be made for six invited

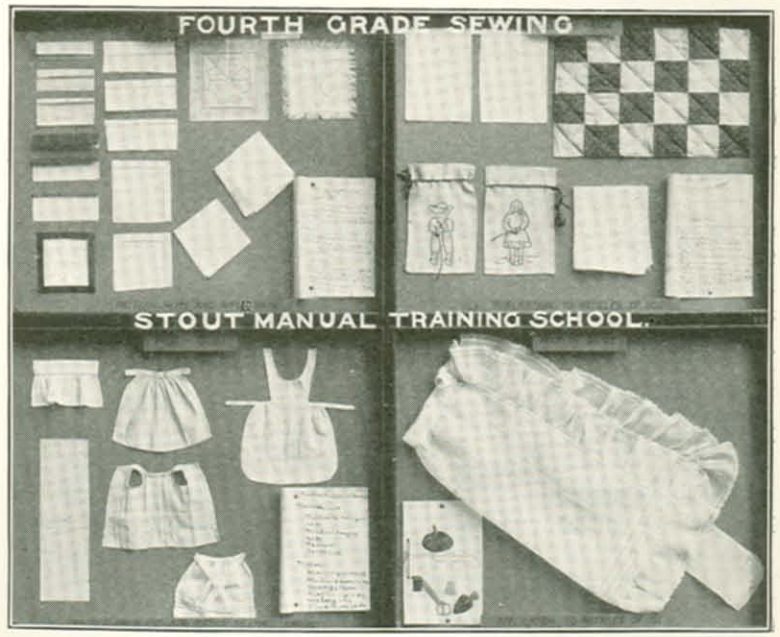
guests. The members of the class act as host, hostess, and waiters. Meals are served in the school dining room.

Food Work in the High School is given twice a week in seventy-minute periods, which include recitation-room work and practical work.

COURSE IN HOUSEHOLD MANAGEMENT.

Junior Year.

1. **Location of house:** Essentials—sunlight, free circulation of air, dryness; discussion of elevation of site, soil, location with regard to contamination.
2. **Selection of house:** Country house—character of soil, water supply, source of contamination; city house—condition of pavements, gutters, soil and drains.
3. **Building of house:** Materials available; conformity to use; convenient arrangement of rooms; sanitary arrangement of cellar, water supply, drainage, ventilation, lighting, heating.
4. **Drainage and plumbing:** Canons of good house drainage—application in selection or building of house; qualities of a good system—location of fixtures, arrangement, use and care of various pipes and fixtures.
5. **Water supply:** Necessity for absolute purity; city supply; individual supply including advantages and disadvantages of various kinds of wells and cisterns, their use and care; filtration and practical tests of condition of water.
6. **Ventilation:** Necessity for pure air; objects of ventilation; real ventilators; makeshift ventilators; ventilation of various rooms and parts of the house.
7. **Heating:** Objects; methods, including a discussion of use of hot air, steam and hot water; stoves and grates; average temperature of various rooms.
8. **Lighting:** Objects; necessity for supply of air; methods, including use of kerosene, gas, electricity; care of lighting apparatus; comparison of value of various methods.
9. **Furnishing:** Fundamental principles of good furnishing; effect of furnishing upon health, comfort, and development of family; consideration of floors, walls, windows with reference to use; finish—materials used, choice of color, designs, etc.
10. **Furnishing and care of different rooms of house:** Kitchen—Furniture, floor, walls, windows, sink, cabinets, tables, cupboards, lights, pantry; special furniture that contributes to comfort, such as high stools, bins, boxes, jars, etc.; care of all furniture including daily and weekly cleaning, and annual cleaning and renovating of walls and floors; dining-room—floors, windows, furniture, including table furnishings; care, weekly sweeping, dust-



ing, crumbing after meals, lighting, heating and airing; sleeping rooms—floors, windows, walls, closet, furniture, including furnishings of bed; care, weekly cleaning, removal of soiled clothes, making of beds, removal of slops, dusting, airing, heating and lighting; bath-room—floors, walls, windows, cupboard, fixtures (simple, easily kept clean, in sight); care, airing and ventilation, thorough cleaning and flushing, use of disinfectants and deodorants.

11. **Planning of house of moderate size,** using principles worked out in previous work; furnishing of the same, with selection of color schemes and furniture adapted to use of house.

The course in Household Management is given during the first half of the Junior year, three seventy-minute periods each week.

DRESSMAKING.

Junior Year.

1. **Underskirt.** Measurements taken and pattern for skirt drafted; skirt made of any suitable material.
2. **Shirt waist.** Measurements taken for shirt waist; pattern drafted; cotton shirt waist made.
3. **Summer dress.** Made of dimity, muslin or other thin material; shirt waist pattern and skirt pattern drafted and used.
4. **Woolen or cotton shirt waist suit.** Shirt waist pattern used drafted skirt pattern used.

Suit cut, fitted, trimmed, and finished. Dressmaking is given during the last half of the Junior year or in the Senior year, three seventy-minute periods each week.

SUMMARY OF COURSE IN DRAWING AND COLOR WORK.

The work in drawing and color is begun in the first year and carried through the eight grades of the public school and two years of the High School. After completing the two years required in the High School, pupils of marked ability, who are desirous of doing so, are allowed to continue the work along special lines.

Free hand cutting as a means of expression is begun in the first year and continued through the third year of grades; it includes cutting from objects, life, memory and imagination.

Free hand drawing from still life, life, nature, memory and imagination, is begun in first year and continued through the entire school course.

Design is begun in first year by making simple borders, surface patterns, etc., of colored sticks, paper tablets, natural leaves, flowers, etc., and is continued throughout the school course. The work is so arranged that the necessary qualities of good design, strength, simplicity, beauty and truth, and the underlying

principles of the anatomy of pattern, order, proportion, repetition, radiation, symmetry, balance, etc., are of gradual and systematic growth.

Applied Design. The work in applied design includes general ornament, all kinds of surface patterns, borders, designs for tiles, pressed brick, metal work, hard wood floors, book-covers, prints, wall papers, rugs, oil cloth, stained glass, china, interior decoration, etc., and in the case of boys, designs for articles to be made and decorated in the manual training.

Composition. The work in design is supplemented by training in the principles of composition as applied in straight and curved line designs, landscapes, etc., through the entire course.

Historic Ornament. The historic styles are studied and the distinguishing features of each are applied in original designs. This work begins in the fourth year with the study of Egyptian art, and is followed by Greek and Roman in the fifth year, Byzantine in the sixth year, Saracenic in the seventh year, Gothic in the eighth year, Renaissance and modern art in High School.

Nature Work. Begins in first year and forms a large and important part of each year's work, each season furnishing material for both drawing and color.

Botanical Drawing. Begins in the first year and is carried on systematically from window gardens, wild flowers, etc. In the fourth year conventionalization is taken up, and later the use of conventional forms in original designs.

Perspective. Free hand perspective is taught from the beginning of the work by a careful training in drawing the true appearance of simple models, and continues throughout the course. In the seventh and eighth years the Laws of Perspective, and the terms, are given—these being made as simple and as few as consistent with a clear understanding of the subject.

Cast Drawing from the antique is begun in the High School and continued through the course.

Clay Modeling. The work in drawing is supplemented during the first four years in the grades by clay modeling from objects, life, memory, etc.

Materials. Charcoal, colored crayons, pencils and Japanese brushes are used in the first year and throughout the course.
Water colors are used from third year on through course.
Pen and ink work is introduced in fourth year.
Designers' colors are used in High School for wall papers, etc.

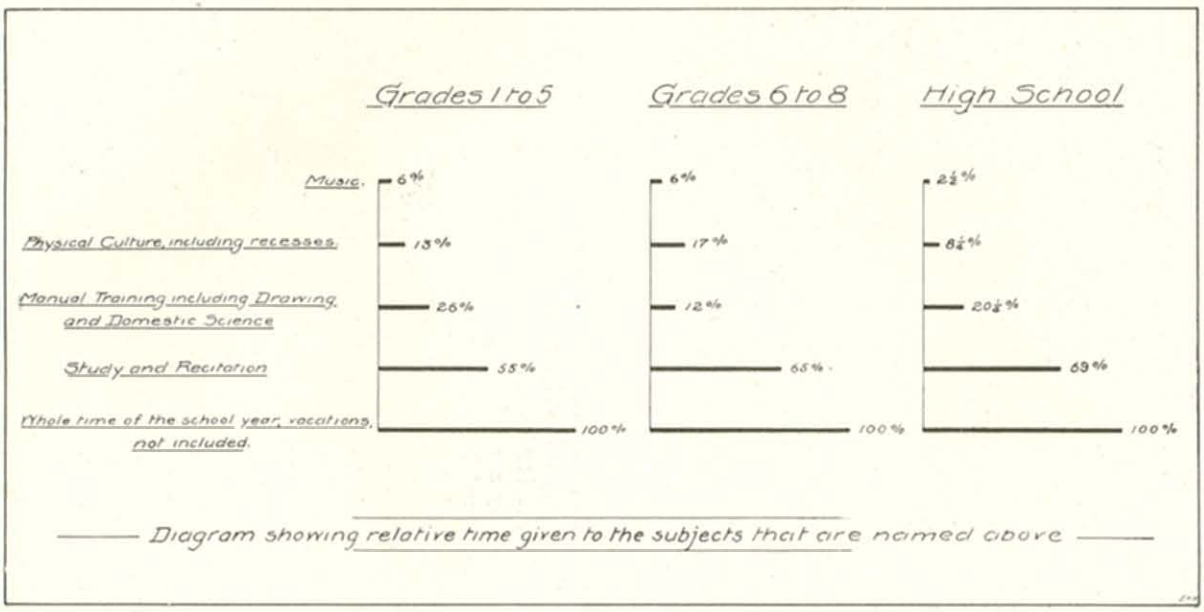


Diagram showing relative time given to the subjects that are named above

CALENDAR

First semester begins September 5, 1904, ends January 20, 1905.

Second semester begins January 23, 1905, ends June 2, 1905.

Holiday vacation begins December 17, 1904, ends January 1, 1905.

Spring vacation begins March 25, ends April 2, 1905.